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THE RELATION OF THE EXTENSION SPECIALIST TO THE RESIDENT STAFF IN HOME ECONOMICS[1]

A. R. MANN

Dean of the College of Agriculture, Cornell University

In the first years of extension teaching as an activity of the land-grant colleges, the work was done by persons whose chief duty was the teaching of students and the conduct of investigations or experiments at the institution. The primary purpose of the meetings about the state was literally to extend the teachings of the college to the persons on farms and in farm homes who could not otherwise gain the benefits from direct contact with those who had special opportunities for studying, with the aid of science, the problems of the land. There was then no question of relationships, harmony in subject matter, keeping abreast, and the kindred problems which trouble administrators and teachers today. In most cases, the complete course, from the experiment which revealed new facts, through the classroom and out to the farms, was embodied in a single individual. In theory, at least, this unity of discovery and impartation of knowledge approached the ideal. It added authority to resident and extension teaching. While it had obvious limitations, it also had advantages which are not entirely compensated for in the methods developed later. It is in the recovery of these advantages, to whatever degree may be possible, that the present-day problem in part lies.

The division of labor. The division of labor occasioned by the segregation of work and workers into the three compartments of teaching,

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research, and extension, respectively, which generally characterize the land-grant institutions today, was an inevitable consequence of the growth of each of the three primary methods of agricultural progress by means of education. It was encouraged by legal enactments in various states, and it was immensely forwarded by the passage of the federal Smith-Lever Act, with its large endowments which could be applied only to the maintenance of coöperative extension work in agriculture and home economics, necessitating the appointment or assignment of persons to engage only in nonresident teaching and demonstrations. On the whole, the change has unquestionably been highly beneficial to all three lines, and has been an important contributing cause to their more recent rapid advance. Increasing specialization is at once a means and a result of progress. But it cannot always be defended as an unqualified advantage. Its complete realization has, in the present instance, involved sacrifices on the part of each of the three divisions of what is fundamentally one great task of increasing human knowledge in the broad fields of agriculture and home economics.

Without attempting to go into all the questions which this division of labor has created, we are here concerned only with those that affect the extension specialist in her relation to the resident division having to do with the same field of knowledge.

Basic to the whole problem of relationships is the consideration of the function of the specialist with reference to extending the teachings of the institution, or, as this has been interpreted to mean, the subject matter as formulated and vouched for by the resident and research staffs. What is the implied responsibility, and what are the facts in the situation?

The purpose to extend the teachings of the institution. Historically, the development of agricultural education in the United States was, in general terms, first, the organization of institutions for teaching agriculture and the mechanic arts; second, the establishment of experiment stations for the acquisition of knowledge; and third, provision for carrying the knowledge supposedly accumulated at the institutions to persons resident in the localities throughout the states. The colleges and stations had been at work for some time, and had made really notable progress, before a widespread demand arose that their accumulations of knowledge should be carried to the people by more speedy and direct means than the slow infiltration of agricultural college students and the uninspiring perusal of bulletins which were received with a measure of distrust. The discussions preceding and attending the passage of the

Smith-Lever Act dealt largely with the consideration that the land-grant colleges and the United States Department of Agriculture had made large advances in knowledge which had not yet found their way to the rank and file of American farmers, who would undoubtedly benefit by the utilization of much of it in their practice. The specific demand was for a means of "extending" the findings of college and station to the people beyond their immediate confines. It was assumed to be the province of the resident and research staffs to accumulate and organize the knowledge, and of the new agencies to carry it out. The organization of the extension work must be such as to accomplish this purpose. This means that there must be a close union, not an occasional conference nor merely a cordial attitude, between the extension specialists and the resident teachers and investigators.

The need for the specialist in the organization of extension service. In a few places the need for extension specialists is not fully accepted, the assumption being that the county agents or home demonstration agents can fully meet the needs. This indicates an immature development of extension service. The agents in the counties stand as "first aids," and can take care of most of the routine or more simple and elementary matters. For the most part their equipment consists of practical experience, and seldom more than an undergraduate course in home economics. Their time is fully occupied in doing things. Progress in home economics subject matter is going forward somewhat rapidly, and at best these agents can visit the points of largest accumulation only infrequently and for brief periods. For the most part they render excellent service, but they are generalists, not specialists. Farmers and farm women are increasingly needing and in many places demanding the aid of specialists. The successful agent will create a greater demand for specialists to maintain a strong, progressive work.

The status of the extension specialist. It is no reflection on the extension specialist to assert that she must depend in an important degree on the resident teaching and research divisions for the means of keeping informed on current progress in the field of knowledge. The persons in these divisions dwell at the point of accumulation, and the energies of the institution are devoted to providing them with the time, facilities, libraries, and equipments to enable them to make original contributions to knowledge and to place immediately at their disposal the most reliable reports of progress made elsewhere.

On the other hand, extension teaching by its very nature, carries one away from these sources, and places the specialist in an atmosphere where empirical knowledge predominates. The inconveniences of constant traveling do not encourage or admit of the best habits of study. The opportunities for original research on the part of the individual are practically non-existent; and the tendency of the federal authorities to urge that persons engaged in the coöperative extension service shall give full and undivided attention to extension, the rigid insistence that persons paid from the Lever funds shall never, on those funds, engage in any investigations whatsoever, even in simple tests or trials which have for their purpose checking or verifying supposed facts to the satisfaction of the specialist prior to their utilization for general demonstrations, and the further insistence that the specialists can, as Smith-Lever employees, demonstrate only what is assumed to have reached the stage of settled fact at the hands of other workers establish the ideal that extension specialists shall be avowedly second-hand teachers. The resident teacher, surrounded as she is with every incentive to growth, seldom, if ever, attains a foremost place if she engages in no investigations on her own account. The extension specialist is, in the nature of the case, doubly handicapped. In the long run this is likely to prove to be the most embarrassing problem in the whole extension service, because of the difficulty of combining the two types of effort.

Observation indicates that the turnover in extension specialists is unduly rapid. In my own experience, the highest-grade persons whom we seek to engage as specialists have an increasing tendency to urge that they do not care to accept appointment unless permitted to do some resident teaching or research, or are assured of adequate periods for study. We are very rapidly passing from the time when the most valuable specialists will be content to engage continuously in field work, or when the advancing demands of farmers and farm women can be satisfied by persons who allow themselves to be removed from frequent, direct, and intimate association with the sources of expanding knowledge. The problem becomes a triplicate one of keeping the specialists abreast, keeping them content in their important work so that their tenure of service will be long, and enabling them to meet adequately the constantly enlarging horizon of farmers and farm women.

The qualifications of the individual. The first condition is to have the right kind of specialist. The fundamental training and the study habits and characteristics of the individual are the best guarantee as to whether she will keep in touch with the progress of knowledge in her field. No

one should be appointed an extension specialist who is not in every way qualified for appointment to the college faculty. No form of organization or other expedient will compensate for lack of zeal and capacity for technical and professional development on the part of the specialist herself. The greater and more sustained the zeal, the less will be the problem, whatever the form of organization.

The form of organization. The form of organization is, however, very important. Taking the country as a whole, we find: (1) institutions where teaching, research, and extension are all developed in a single department of home economics under a single administrative head; (2) institutions where the extension specialists are organized wholly apart from and coördinate with the resident division, the two, however, having no official relationship; (3) institutions where there exists an extension organization in home economics, but no resident teaching nor research work in the subject, the resident work being established, if at all, at a separate state institution. What is to be done as regards the specialists, under these various circumstances? Let us consider these in reverse order:

1. We have the situation in which there exists at the land-grant college only an extension organization in home economics, with no resident work whatever at the same institution. I say without qualification that under such circumstances the efforts should be unremitting to obtain the means for establishing a full-fledged resident department of home economics at the institution. If the land-grant colleges are to maintain extension in home economics, as the Smith-Lever Act charges them to do, the prerequisite to success is the establishment in the colleges of strong resident departments. Extension cannot remain vital where there is nothing to extend beyond the original equipment of the extension specialists.

2. Where the extension service is organized wholly independently of the resident division in the same institution, with no organic relation other than that they are both parts of the same college, this condition would seem to find its explanation in one of four causes:

The first cause is the circumstance of origin. In a few cases it is undoubtedly true that the separation is due to the fact that the divisions were organized at separate times and under separate administrations. In the earlier years they may have done well separately. In the long pull, they will do better with an intimate relationship. The circumstance of independent origin is not of itself a valid reason for retaining organic separation.

A second cause, which has something to support it, is administrative convenience in having the specialists organized about the office of the director of extension, so that program making and field assignments may be more readily handled. However, I am firmly of the opinion that, in the long run, problems of administrative convenience will be less trying than those of the maintenance of professional standing. The unit of organization should be the subject matter, not the machinery for getting it out.

A third cause for the separation, which is sometimes continued where deliberate judgment dictates that it really should be otherwise, is fear on the part of the extension director and the extension specialists that the specialists will be so dominated by the resident staff or the head of the resident department that the extension service will actually suffer. There have been occasions for this fear. Such a situation is inimical to good extension work. The specialist must have, and should eagerly seek, the aid of the resident staff in planning her work and formulating subject matter. She lays herself open to real danger of error in teaching if she does not freely consult the resident workers in the same field. But if, in the interest of maintaining either superior position or harmony in subject matter, dictation is resorted to, the arrangement fails. A fundamental consideration is equality of recognition and standing, and the assumption of equivalent general capacities.

A fourth cause, which has perhaps had some bearing, is fear that the head of the resident division will desire to exercise the full power of selection of extension specialists without a sufficient appreciation of the particular qualities that make for success in extension teaching. It must not be overlooked, however, that selection by the director of extension alone is open to fully as great danger from the standpoint of technical qualifications. The only protection from danger on either hand is an arrangement that amounts to joint selection by the head of the department and the director of extension.

3. In the best organization, teaching, research, and extension in the given field of knowledge will all be organized at the same institution in a single department, and the teaching and research will have at least coördinate development with the extension; preferably greater development, so as to keep constantly ahead of the demands in practice. The resident department will be responsible for subject matter, the programs will be matters of joint conference, and the field assignments will be largely or entirely in the hands of the extension service, but always with full consultation with the specialists affected.

We must not omit another important reason for establishing the most intimate relations between resident and extension workers, namely, that the resident staff may know the viewpoint of the field and keep in touch with practical and public affairs, and that the specialist may always retain the viewpoint and the poise of the institution, careful as to facts and sensitive to the limitations of her function as a teacher, so as not to become a mere advocate of class or partisan views or be carried away by temporary moods or prejudices of those with whom she must constantly deal. Extension service everywhere has suffered from occasional, if not frequent, lapses from the standards that should always control educational workers.

Special provisions. The problem is not fully solved, however, when well-trained specialists have been engaged and have been established in an organization that provides the most intimate official relations with the resident teaching and research staffs. This condition obtains at some of our institutions and the situation is not thereby fully met. The pressing demands of the field operate to defeat the advantages which the organization contemplates unless conscious provision is made to promote frequent conference among the workers, to bring them into touch with whatever investigations may be in progress, and to allow periods for uninterrupted study and organization of new material. This conscious provision at the institutions takes many forms: individual conferences with the particular resident worker best able to give help on the problem in hand; stated weekly or monthly conferences, in which a definite aim is to discuss the problems that have arisen in extension, in resident teaching, and in research, and to review the latest acquisitions of knowledge; keeping specialists free from field assignments for certain days of the week or certain weeks in the month, or for longer periods, in the hope that they will find time to contemplate the recent contributions; granting temporary leaves of absence, with or without salary, for purposes of study or investigation; arrangements to carry a limited amount of teaching from time to time, or provision for the prosecution of limited projects in research which admit of intermittent attention; financing specialists to attend summer schools; encouraging specialists to register for advanced degrees; attaching specialists to departmental seminars; identification of specialists with scientific societies within the institution; preparation of material for specialists by the resident staff; special arrangements with members of the resident staff to test problems encountered by the field worker; and the granting of sabbatic leaves of absence, with salary, for professional and technical improvement.

The contribution of the specialist to resident teaching and research. It would be quite unfair to omit mention of the reverse aspect of the question, namely, the benefits that accrue to the resident teaching and research officers from their association with a good extension worker. The classroom and the scientific laboratory are the primary means of progress in many respects, but they are not always infallible, and in frequent cases they do not afford the check that is possible only by field trial under normal circumstances and under widely varying conditions. When a new method or practice is committed to the extension worker for demonstration and application, it is likely to come up against the final and severest test as to its soundness. The specialist thus makes important contributions both to knowledge and to practice.

The specialist, if she is observant, will frequently aid the station by discovering the need for experimental verification of much that has long been accepted in practice as the right thing to do. The specialist is at the most sensitive point of contact to discover practices that need verification, or problems that need illumination.

The specialist makes her contribution both to teaching and to research. Some of the most helpful things introduced into the resident courses are the result of suggestions brought in from the field, but the contributions to teaching methods are probably as great as, if not greater than, the contributions to subject matter. Resident teaching has usually proceeded from the abstract to the concrete; from the statement of the principle to its elucidation by details of practice. The extension teacher proceeds from the concrete to the fundamental facts that lie back of it; from the practice to the principles that explain and justify the practice. The classroom audience, largely inexperienced and therefore lacking an essential to ripe judgment, will remain and receive with apparent respect and usually without challenge what the teacher sets forth. The farm audience, whose equipment is chiefly experience, passes judgment, gives voice to challenges, and goes home if the teaching does not interest and convince. One specialist describes the extension method as more psychological than logical, and the resident method as the reverse. The extension method is and must be both. The teaching methods thus developed with mature but less-trained minds, have certain values for the classroom and the immature but more highly trained minds; and the resident teacher who has intimate contact with a good extension specialist, consciously or unconsciously is likely to modify her classroom procedure in some respects by the incorporation of methods which the specialist has set into her mind.

The future of the extension specialist. A phase of the question which will bear no overlooking is, what is to be the future of the extension specialist? It is too early to give an exact answer to this question, but the indications are strong that the trend will be steadily toward a demand for persons who have superior technical and scientific training and who will stand very close to the research in the field. There will always be need for a certain amount of elementary work in the extension field; but as farmers and farm women progress, as they are progressing, and as the vocational schools do their work under the Smith-Hughes Act, the requirements will become increasingly exacting. That institution is wise and forward-looking which is today seeking for appointment as extension specialists, persons not only with practical sense but also with advanced training or station experience or its equivalent, and with highly developed habits of study. The specialist of the future will be in a larger and truer sense a specialist, to aid and advise on the more difficult problems. She will be less a second-hand teacher. She will demand every opportunity and facility to keep abreast of progress in her field, and, if I mistake not, will require arrangements that will make possible her own independent examination and solution of some of the problems that arise in her work. This means either that she will be less exclusively an extension specialist, or that she will have much more time for personal improvement than the present arrangements afford.

In order to develop or to engage and hold the type of persons that will be increasingly needed as the work matures, there are demanded the fullest comradeship, equality of recognition, mutual respect, equal opportunities for study, and intimate, cordial association, between the extension specialists and the members of the resident staff.

OUR CAMPUS TEA ROOM

EDA LORD MURPHY

Iowa State College

We like to talk about our campus tea room because it is still comparatively new and because it has been developing slowly but surely. It is now firmly established and we hope that it will become more and more a college asset.

There was an insistent demand for a class in large quantity cookery, and in the fall of 1918 the first small class began preparing luncheons for about twenty faculty women, who were glad to be able to get a hot lunch so conveniently. In a very short time it was necessary to move into a larger room where forty could be served. Before many weeks passed, members of faculties of other divisions, both men and women, were asking to be allowed to come. We warned the men that the luncheons were rather "ladylike," but quite a number continue to be our loyal patrons.

From the very beginning we have prided ourselves on an interesting variety in our menus. We have never repeated one in toto. The complaints are in this wise, "Oh, enjoy this now for you may never have it again." It has taught patrons as well as students the infinite possibilities in ordinary foods. This has, no doubt, been easier because students rather than employees do the cooking. The charge for the luncheon is thirty-five cents. The following are typical menus:

Fall	*Winter*	*Spring*	*Summer*
Potato soup	Escalloped tomatoes	Creamed eggs on toast	Cheese and prune salad
Orange salad	French fried potatoes	Asparagus on lettuce, French dressing	Brown bread and butter
Graham bread and butter	Caramel custard	Pineapple ice	Cherry shortcake and cream
Date cakes	Bread and butter	Sand tarts	Iced cocoa
Tea or milk	Tea or milk	Tea or milk	

Occasionally, to break the monotony, we give a choice of two vegetables or an opportunity to order a French omelet or waffles! Ordinarily, the luncheon is table d'hôte and substitutions are not often asked. Since foods have become cheaper, we give the choice of milk or tea, and provide plenty of bread and butter. We plan to have very little meat because nearly all the faculty have dinner at night. We give them coffee as an occasional treat, especially when the making of doughnuts gives us a good excuse; ordinarily we serve only tea or milk.

The very name of Tea Room has grown to mean a place with "atmosphere" and with furnishings that are unique. Often these ideals have been more important than the quality of the food and service. We have aimed at an "atmosphere" of fresh air, restfulness, and genuine welcome; equipment and furnishings are only a means to the end of serving uniformly delicious foods in an attractive way.

The ten tables and forty chairs are black enamel, the china of the Old Haarlem pattern, the silver heavily plated and hammered. We use paper doilies and paper napkins. The centerpieces are glass finger bowls with two or three real flowers, usually calendulas because they fit our color scheme best, last well, and are comparatively cheap. The curtains, designed by students, are very decorative with a stunning pattern in gay appliqué on airplane linen. There is "One picture on each wall, not many things at all." The room has walls and ceiling of beaver board and the woodwork is common pine. These are finished with a soft gray stain which gives the quiet background so necessary where there are many people. The orange in the flower design on the curtains, with the touch of black in the stems of the tall hollyhocks, is repeated by the orange of the calendulas on the black tables, and is echoed, one might say, in the Jules Guérin prints. Two black-enameled serving tables and a desk for the cashier complete the dining-room furnishings.

In the laboratory we wanted high ovens and in order to obtain them we bought two gas ranges with ovens at opposite ends, rather than a larger range with one low oven. We placed them back to back and have plenty of burners and oven space too. The work tables have nickel legs and heavy oak tops. The vegetable sink proved to be of absorbent material which showed grease spots. The idea finally occurred to us to grease it all over and make it uniformly black. This with a thin coat of varnish makes an almost beautiful sink! The pan rack over the work table gives an "institutional" air to the kitchen as do the large aluminum and retinned steel cooking utensils. We have ample space for pantries and store room. In every way the equipment is conservative.

But even good equipment and good food will not make a tea room successful. The students are made to realize that business management, plus volume of trade, are essentials.

The method of book keeping is very simple and, as far as possible, is done by the students. The differences between a tea room such as

ours (not run for profit) and a real business are made clear. But principally, in this course, we emphasize menu making for various kinds of institutions, quantities for fifty, kitchen management and technique, standards of quality, cooking for profit, standardization of portions, and so on.

It early became apparent that the tea room ought to be used by more people than could possibly come for luncheon; so we opened it for the serving of afternoon tea, between 4 and 5 o'clock. At first we made the mistake of calling it the "Home Economics Tea Room," and limiting its use to seniors and faculty. It is now known as "The Campus Tea Room," and is open to all college people. Men, as well as women, enjoy the good sandwiches, and the delicious cakes and drinks. It is the custom now for committees to make plans over the teacups, for visitors to be told "not to fail to see the Tea Room," for groups of all kinds and descriptions to use it. Freshmen, sophomores, juniors, seniors, faculty men and women, young and old, have "discovered" the place and made use of it. We feel that we are paying the best kind of dividends on the money invested. As a matter of fact, it must carry itself financially, and it does.

The work in the afternoon is done by students paid at the rate of thirty-five cents an hour. It is directed by some one from the institutional classes and she is assisted by others. We never have any trouble even to get dish washers, and the whole staff have the greatest pride in the financial success of our enterprise.

It is far more than a place to obtain food. People say that it is restful; that after a cup of tea they can go back to work if necessary; that they are glad to have a place to meet and to entertain each other and guests; that those from other divisions feel much better acquainted with our division; that there is a gentle influence that is unconsciously regarded when students and faculty meet in this informal way. We like to think that these things are true and that while a comparatively small number are receiving training (the present class numbers twenty) a much larger number are receiving the benefits and pleasures of "The Campus Tea Room."

THE BASAL METABOLISM AND FOOD CONSUMPTION OF UNDERWEIGHT COLLEGE WOMEN

KATHARINE BLUNT AND VIRGINIA BAUER

The University of Chicago

How prevalent is underweight among college women? Does the underweight college woman have a normal basal metabolism and does she consume enough food? It was to secure some light on these questions that the investigation described in this paper was undertaken. The points taken up are: first, the standards of weight for young women and the extent and harm of underweight; second, the effect of underweight on basal metabolism as seen in data already published and in our own observations on a group of underweight college women; and third, observations on the food consumption of this underweight group.

UNDERWEIGHT AMONG YOUNG WOMEN

Standards of Weight for Young Women. The commonly used standards of weight for adults are those gathered by life insurance companies by averaging the weights and heights of the individuals whom they accept for life insurance. Those for women are based on 136,504 policies, including 53,487 for women between 20 and 29 years of age. They were published (1) in 1912 in the Medico-Actuarial Mortality Investigation, Volume I, p. 66. The summary is here reproduced in Table I.

These figures are quoted, among others, in greater detail by Joslin in "A Diabetic Manual" and in less detail by Fisher and Fisk in "How to Live," and have become the standard for all comparisons. They differ slightly from those given by Mrs. Rose in "Feeding the Family," most of her weights being a pound or two lower. Unfortunately for scientific experiments, the figures are for women in indoor clothing, including shoes, rather than nude. The women students in our investigation were weighed nude and measured without shoes. The importance of this difference, however, is not so great as it would seem at first sight, particularly for computing the percentage of underweight. A difference of two inches in height in the insurance table corresponds usually to four pounds in weight; and two inches and four pounds are fair averages for heights of women's heels and weights of women's clothing. That is, the shift in the table is the same in making both corrections. In computing percentages of underweight, very little error is therefore introduced if the nude individuals and those from the life insurance tables are compared directly.

When the tables are used for persons over 30, the warning must be kept in mind that the average person tends to grow too fat with increasing years.

"We should endeavor to keep our weight at approximately the average weight for age 30, the period of full maturity, as experience shows that those so proportioned exhibit the most favorable mortality."

TABLE I

Build—Women
Graded Average Weight

AGE GROUP	4 FT. 8 IN.	4 FT. 9 IN.	4 FT. 10 IN.	4 FT 11 IN.	5 FT.	5 FT. 1 IN.	5 FT. 2 IN.	5 FT. 3 IN.	5 FT. 4 IN.
15–19	104	106	108	110	112	114	117	120	123
20–24	107	109	111	113	115	117	120	123	126
25–29	110	112	114	116	118	120	122	125	129
30–34	113	115	117	119	121	123	125	128	132
35–39	116	118	120	122	124	126	129	132	136
40–44	120	122	124	126	128	130	133	136	139
45–49	123	125	127	129	131	133	136	139	142
50–54	125	127	129	131	133	135	138	141	144

AGE GROUP	5 FT. 5 IN.	5 FT. 6 IN.	5 FT. 7 IN.	5 FT. 8 IN.	5 FT. 9 IN.	5 FT. 10 IN.	5 FT. 11 IN.	6 FT.
15–19	126	130	134	138	141	145	150	155
20–24	129	133	137	141	145	149	153	157
25–29	132	136	140	144	148	152	155	159
30–34	136	140	144	148	152	155	158	162
35–39	140	144	148	152	156	159	162	165
40–44	143	147	151	155	159	162	166	169
45–49	146	151	155	159	163	166	170	173
50–54	148	152	157	162	166	170	174	177

Prevalence and Effect of Underweight Among Young Women. There seems to be very little definite knowledge as to the prevalence of underweight among young women; extensive studies such as those made among school children are entirely lacking. That underweight is common is indicated by the fact that the physician to women in the University of Chicago reports that 150 out of 500 women entering the University in the autumn quarter, 1920, were 10 per cent or more underweight for their height.

Another striking example of the extent of underweight may be taken from the observations of Harris and Benedict (2) in "A Biometric Study of Basal Metabolism." They list studies made at the Nutrition Laboratory on 103 supposedly normal women, 66 of whom were under 30 years of age and therefore comparable with our young women. If the weights and heights of these 66 are compared with the life insurance table, it is found that 23 or two-fifths are 10 per cent or more underweight.

More is known about the harmfulness of underweight than about the extent. Insurance companies have long recognized that the underweight

young person is a poorer "risk" than the overweight one. Their figures showing this fact for young men are given in Table II which is quoted from the second volume of the Medico-Actuarial Investigation (1). They estimate that for certain ages there will be so many deaths per thousand young men insured. They call this number 100 per cent. They really find, as shown in the table, that there are many more deaths among the underweight young men than among the overweight. For example the deaths of the men 25 per cent underweight are 34 per cent more numerous than the average rate, and for young men 25 per cent overweight only 3 per cent more numerous. Or, to express the same thing in another way, a young man of average weight and one as much as 25 per cent overweight have about an equal chance of life; but one as little as 10 per cent underweight has 13 per cent more chances of dying. The report says similar figures have been found to be true for young women. These are rather surprising facts and indicate strongly that the underweight young person is not a well or a normal one.

TABLE II

Per cent of Actual to Expected Deaths According to Percentage Variation from Average Weight Men between the Ages of 20 and 29

AGE	− 30	− 25	− 20	− 15	− 10	− 5	Av.	+ 5	+ 10	+ 15	+ 20	+ 25	+ 30	+ 35
20–24	141	134	127	120	113	107	104	100	99	100	101	103	106	109
25–29	128	122	117	112	106	102	100	98	97	100	104	107	111	115

On the other hand, it must not be forgotten that overweight also has its dangers, especially, as emphasized by Joslin (3), that of diabetes, which is "largely a penalty of obesity, and the greater the obesity the more likely is nature to enforce it." It is the young person that is in danger from underweight and the middle aged to elderly person that is in danger from overweight.

General Characteristics of Underweight Young Women as Illustrated by our Subjects. Nineteen underweight young women served as subjects for the metabolism and diet observations given in this paper, ranging from 11 per cent to 26 per cent below the life insurance standards. The majority of them were obtained through the Physical Education Department of the University in the fall of 1920–21, by the coöperation of Florence McArtle to whom the underweight women students were at that time reporting, and to whom our appreciative thanks are due, as well as to the subjects themselves. Especially characteristic of almost all of the girls were nervousness, restlessness, and a more or less high-strung condition. Most of them tired easily and worried much about their work, and some alternated periods of intensity with periods of marked listlessness. On the whole they were distinctly below par in general appearance and behavior and did not seem like

normal, vigorous girls, though as the result of a physical examination of all but one, they had been pronounced normal except for their underweight. They were all rather serious-minded and sensible young women, and with one exception were not inclined toward many social events, thus eliminating the factor of the excess energy often demanded for such things.

Although most of them were not in the Home Economics Department, they were interested and were willing to coöperate. One of the writers became fairly well acquainted with them all and observed their habits and tendencies as much as possible. A few of the most striking individual characteristics are listed below.

No. 1. Extremely restless, bad posture.
No. 2. Aunt said "she's a live wire"—high strung, worries.
No. 3. Rather languid, but ambitious, was gaining a little.
No. 4. Very restless, although not energetic, always tired.
No. 5. Studies hard, very energetic and restless.
No. 6. Extremely nervous, excitable, always seems to be doing something new.
No. 7. Highly excitable, looks very well, has red cheeks. Does a good deal of laboratory work.
No. 8. Has had difficult time as freshman, her aunt said she could not be still even when asleep.
No. 9. Has never gained weight since she had the flu, fairly restless.
No. 10. Fidgets continually although she goes at things composedly, has lost some weight recently.
No. 11. Good deal of laboratory work in chemistry.
No. 12. Listless, says she usually does not feel well.
No. 13. Unambitious, does not want to gain.
No. 14. Too much study and worry, quiet and retiring disposition, has lost considerable weight.
No. 15. Very nervous, tires easily, stays up too late.
No. 16. Restless, much week-end frivolity and late hours, losing slightly.
No. 17. Worried about work, late bed time, no appetite, losing weight.
No. 18. Extremely high strung, too little fresh air, losing weight.
No. 19. Very active and ambitious. Her friend said, "She's in for anything."

BASAL METABOLISM

One of the points about which we wished to secure information was whether the basal metabolism of such underweight young women as these 19 was normal or not. If it should be found high their underweight might be partially explained by their excessive food need to meet the extra metabolism; and if low they might be said to be living on an abnormally low nutritional plane.

Already Published Data on Basal Metabolism of Underweight Individuals. There is not a great deal in the literature to lead one to anticipate whether the basal metabolism of our students would be normal or not. Semi-starved individuals are reported as having distinctly low metabolism. For example, Lusk (4) quoting from Magnus-Levy, tells of a neurasthenic boy who practically starved himself before coming to the hospital, and while on his low

diet in an extremely emaciated condition with his weight at only 36.2 kilos, his basal metabolism per square meter was 33 per cent below normal. On a liberal diet with his weight at 38 kilos the heat production was still 17 per cent below; but ten weeks later with his weight increased to 52 kilos the metabolism had gone to 2 per cent above normal. "It is evident," says Lusk, "that the reduction of the weight of a man by 30 per cent may lead to a reduction in his requirement of energy by 44 per cent, a factor of conservation." Lusk in his recent paper on "The Physiological Effect of Undernutrition" (5) also discusses the experiences of the two physiologists Zuntz and Loewy who both suffered extremely from their much restricted food intake during the war. Loewy's weight decreased from 65 kilos in 1914 to 57 kilos in 1916, and his metabolism from 1429 calories to 1169 calories daily—a much greater percentage decrease in metabolism than in weight. Zuntz's experience was similar. For both, then, low dietary and emaciation resulted in a much decreased metabolism, a distinct slowing up of body functioning. They were of course losing nitrogen constantly from their bodies.[1]

Interesting in this connection of semi-starvation is the study of Benedict and his associates (6) on the group of young college men who were put on a restricted diet for almost five months, their food intake being reduced practically one-third. In the first few weeks they lost on the average ten per cent of their body weight and then held this weight on the continued low food intake. They, too, showed a greater lowering of metabolism than of weight, their average heat production per kilo at the beginning being 25.2 calories and at the end 22.3 calories. Their metabolism, if compared with the Harris and Benedict standard, averaged 1.1 per cent above at the beginning and 14.6 per cent below at the end. Benedict particularly calls attention to the fact that these men were in continual negative nitrogen balance, averaging a total loss of 175 gms. nitrogen from their bodies during the five months. He suggests that since nitrogen compounds act as a stimulus to cellular activity, the loss of nitrogen from body tissue at least in part caused this lowering of the metabolism. It is interesting to find, from Benedict's comparison of the weights and heights of these young men at the time of their mininum weight with the life insurance standards, that only one was more than 10 per cent below. That is, they were not excessively thin, but they had lost much weight and had lowered their basal metabolism.

In all these cases it appears that extreme malnutrition, with low food intake and loss of nitrogen from the body, is the cause of the low metabolism rather than the low weight itself.

On the other hand, in contrast to these cases of extreme malnutrition with low metabolism, an ordinary thin person may show a higher metabolism per

[1] Toward the end of the war when Loewy's endogenous protein metabolism had become very extreme his metabolism went up again.

kilo than a very fat person, though not necessarily a higher metabolism per square meter of surface. The much quoted example, cited by Lusk (4), of the fat and thin brothers, aged 10 and 11 respectively, with 33 pounds difference in their weights is an illustration of this point. The metabolism per kilo of the thin boy was 17 per cent higher than his fat brother, but per square meter it was only 2 per cent lower. Similarly, and often to a greater extent, the metabolism of underweight children has been found (7) to be distinctly higher than that of normal ones. The adipose tissue of the fat person is not actively metabolizing and at the same time it possibly may serve to protect the body from loss of heat and so make a lower heat production satisfactory. With the thin person more of his body is metabolizing and he has less of a protecting layer, and therefore every kilo he possesses may have to produce heat faster to keep up the body temperature.

Is it to be expected that our underweight young women will resemble the war sufferers and Benedict's underfed young men with their low metabolism, or the underweight children with their high metabolism?

The group of 23 underweight young women already cited as occurring in the supposedly normal group discussed by Harris and Benedict (2) are nearest in character to our group of any so far mentioned. We have retabulated the data on these young women, presenting it in Table III in the order of their percentage underweight and comparing the metabolism of each one with the two commonly accepted standards of metabolism—Harris and Benedict's predictions (2) for women of their age, weight, and height, and the DuBois standard of 37 calories per square meter per hour for women between 18 and 30 years. Comparison with both of these standards shows an average metabolism for the group almost exactly normal—only 2 per cent or 3 per cent below. Four of the group are from 10 to 13 per cent below normal metabolism and one over 10 above. There is no close relation between per cent of underweight and of low metabolism.

These various cases therefore tend to show that the basal metabolism of the supposedly normal, underweight person may be practically normal; but that in cases where the food intake has become seriously restricted and the person has lost considerable weight the heat production has also decreased below the normal.

Observations on University of Chicago Students. In the experiments on our underweight young women the Benedict Portable Respiration apparatus (8, 9) was used to determine the basal metabolism. The procedure outlined by him was carefully followed. The subject came to the laboratory early in the morning, having taken no food since the night before, and rested quietly 30 minutes before any observation was taken. Duplicate 10 minute periods were always observed and unless they agreed within 5 per cent they were discarded and other observations taken or the day's readings discarded.

TABLE III

Metabolism of Underweight Women of the Nutrition Laboratory

NUMBER	AGE	HEIGHT	WEIGHT	UNDER WEIGHT	HEAT PRODUCTION PER DAY			HEAT PRODUCTION PER SQ. M. PER HR.	
					Observed	Benedict predicted	Difference	Observed	Difference from DuBois predicted, 37 cal.
		cm.	*kilo*	*per cent*	*cal.*	*cal.*	*per cent*	*cal.*	*per cent*
62	24	159	43.0	24	1158	1248	− 7.2	34.2	− 7.6
56	27	167	47.0	24	1168	1288	− 9.3	32.2	−12.9
90	22	157	41.3	23	1073	1238	−13.1	32.8	−11.4
88	26	159	44.2	22	1292	1251	3.2	38.3	3.5
58	25	159	45.0	21	1393	1262	10.3	40.4	9.2
60	29	159	44.9	21	1272	1242	2.2	37.1	0.3
57	22	164	46.7	20	1336	1302	2.6	37.1	0.3
64	19*	154	41.5	20	1207	1249	− 3.4	37.0	0.0
61	27	157	44.8	19	1189	1248	− 4.7	35.0	− 5.4
33	25	168	52.4	16	1321	1350	− 2.1	34.6	− 6.5
43	25	164	50.5	16	1327	1324	0.2	36.1	− 2.4
44	18	166	50.1	13	1235	1358	− 9.0	33.4	− 9.7
45	25	164	50.0	16	1345	1319	1.9	36.6	− 1.0
89	19	152	43.9	15	1143	1268	− 9.8	34.4	− 7.0
46	24	162	49.8	14	1419	1318	7.6	38.9	5.1
55	22	161	48.2	14	1294	1311	− 1.2	36.1	− 2.4
38	29	163	51.6	13	1421	1315	8.2	38.2	3.2
40	27	163	51.1	13	1265	1319	− 4.1	34.2	− 7.6
86	24	160	49.1	13	1153	1309	−11.9	32.2	−13.0
21	23	175	57.7	12	1430	1423	0.5	35.0	− 5.4
47	22	160	49.7	11	1139	1323	−13.9	31.6	−14.6
48	19	160	49.4	11	1300	1336	− 2.3	36.3	− 1.9
53	24	159	48.5	11	1480	1301	13.7	41.7	12.7
Average							− 1.81		− 3.24

* Harris and Benedict do not give standards for women under 21 years. The prediction for the young members in this group was computed by noting the decrease for women of their age and height between 21 and 22 years, and adding this amount to the prediction for 21 years. The difference is only about five calories per year at these ages.

Because of possible day-by-day variation in basal metabolism the subject was observed two days and the average of the two taken as the "observed" metabolism. The detailed results for the 17 subjects and comparisons with the two standards are given in Table IV. The age is that at the nearest birthday, the weight is taken without clothing, and the surface area is computed from the DuBois height-weight chart.

TABLE IV

Metabolism of Underweight College Women

NUMBER	AGE	HEIGHT	WEIGHT	UNDER WEIGHT	SURFACE AREA DUBOIS CHART	OXYGEN PER MINUTE	HEAT PRODUCTION				
							Per 24 hours			Per sq. m. per hr.	
							Observed	Benedict predicted	Difference	Observed	Difference from Dubois predicted 37 cal.
	yrs.	*cm.*	*kg.*	*per cent*	*sq. m.*	*cc.*	*cal.*	*cal.*	*per cent*	*cal.*	*per cent*
1	24	174	48.1	26	1.57	206 189 av. 197	1370	1390	− 1.4	37.2	0.6
2	21	167	46.0	24	1.49	166 171 av. 169	1175	1309	−10.2	32.2	−12.9
3	27	167	49.5	23	1.54	171 207 av. 189	1310	1317	− 0.5	35.7	− 3.5
4	19	167	47.3	22	1.51	204 197 av. 201	1400	1327	5.5	38.6	4.3
5	30	172	52.0	21	1.59	194 201 av. 197	1370	1330	3.7	35.9	− 3.0
6	25	167	49.0	21	1.55	No metabolism data					
7	20	165	47.3	20	1.50	185 172 av. 177	1230	1318	− 5.9	34.2	− 7.6
8	19	157	46.8	19	1.41	213 181 av. 197	1370	1309	4.8	40.5	9.4
9	22	158	44.7	19	1.42	No metabolism data					
10	28	164	49.7	19	1.59	179 184 av. 181	1250	1302	− 3.9	34.3	− 7.2

TABLE IV—*Continued*

NUMBER	AGE	HEIGHT	WEIGHT	UNDER WEIGHT	SURFACE AREA DUBOIS CHART	OXYGEN PER MINUTE	HEAT PRODUCTION				
							Per 24 hours			Per sq. m. per hr.	
							Observed	Benedict predicted	Difference	Observed	Difference from DuBois predicted 37 cal.
	yrs.	*cm.*	*kg.*	*per cent*	*sq. m.*	*cc.*	*cal.*	*cal.*	*per cent*	*cal.*	*per cent*
11	18	162	47.3	18	1.46	200 206 av. 203	1410	1220	15.5	40.3	8.9
12	30	161	50.0	15	1.52	No metabolism data					
13	25	156	45.9	15	1.42	177 160 av. 169	1175	1260	− 6.8	34.5	− 6.8
14	21	157	45.0	15	1.41	179 189 av. 184	1260	1272	− 0.9	37.6	1.6
15	21	167	52.0	14	1.57	199 199 av. 199	1380	1361	1.4	38.1	3.0
16	24	158	47.2	13	1.46	202 189 av. 194	1350	1292	4.5	38.4	3.8
17	28	171	57.2	12	1.65	174 173 av. 174	1200	1387	−13.4	33.3	−10.0
18	20	160	50.8	12	1.50	210 190 av. 200	1400	1343	4.3	38.0	2.7
19	19	162	51.7	11	1.51	166 169 av. 168	1160	1363	−14.9	32.1	−13.2
Average									− 1.3		− 1.9

The average metabolism of the group was found to be fairly close to the standards—only 1.3 per cent and 1.9 per cent below. Four of the subjects are higher than the Benedict predicted, three almost exactly the same, and nine below. Four are higher than the DuBois standard, two almost the same, and twelve lower. These differences from the predicted are too slight to be significant.

These two slight differences from standards are almost exactly the same as those found for the 23 underweight women of Benedict's study referred to above and are slightly less than those found by Blunt and Dye (10) from observations on seventeen women only one of whom was underweight.

There is no consistent relation in the writer's subjects between the per cent underweight and the difference from the predicted. Also with possibly one exception, No. 11, who was 15.5 per cent above the Benedict standard, there was no abnormally high metabolism which might indicate hyperthyroidism. This underweight group, therefore, showed in most cases an entirely normal basal metabolism.

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(To be concluded in the May issue.)

CURRENT HOME ECONOMICS RESEARCH IN AMERICAN COLLEGES AND UNIVERSITIES AND IN GOVERNMENT INSTITUTIONS

From the Research Committee of the American Home Economics Association

Agnes Fay Morgan, *University of California, Berkeley*
Grace Denny, *University of Washington, Seattle*
Nina B. Crigler, *Kansas Agricultural College, Manhattan*
Arma B. Richardson, *Federal Board for Vocational Education*
Florence Nesbit, 102 E. Oak St., Chicago
Minna C. Denton, *Office of Home Economics, Washington, D. C., Chairman*

Foreword. As it is manifestly impossible to publish in one installment a list covering all these institutions, the committee is reporting, for publication, titles in the order of their presentation. Additions to this list will appear in future installments. The committee therefore solicits reports from all home economics departments who have students doing graduate work on problems of importance to home economics, whether these studies are being carried on within the department itself, or in cooperation with some other department of the institution.

It is the desire of the committee to include in this list only those titles which represent work already completed, or sufficiently far advanced that there is every reason to suppose that the thesis will be completed by a given date. Studies made by faculty members or by professional research workers are also called for. In those cases where the study has been published, medium and date of publication should be given.

In case of certain institutions it is likely that not all of the papers properly classified as home economics research have been included. Additions to this list are solicited.

THE UNIVERSITY OF CALIFORNIA, 1915–1921

(All of these papers are Master's theses, except nos. 11 and 12.)

Department of Household Science

The Determination of the Conditions Governing the Absorption of Fats by Fried Foods. Ella Louise Rau, 1916. (See Physical and Chemical Changes in Fats Used in Frying Food, Morgan and Ella Rau Cozens, *Jour. Home Econ.*, 11, 394, 1919.)

Relations of Certain Controlled Conditions to Time of Cooking and Loss of Nitrogeneous Extractives in Roasting Beef. Precious Mabel Nelson, 1916.

A Comparison of the Oxalate Titration and Electrometric Methods for the Determination of the Development of Acidity in Milk. Margaret Hazel Mills, 1916.

A Study of Home Canning Methods and Their Effect on the Viability of Certain Anaerobes Found in Canned Foods. Carrie Ethel Castle, 1919. See *Jour. Home Econ.*, 11, 246, 1919.

Note: Mrs. Carrie Castle Dozier is continuing certain phases of this problem as part of the botulism investigations being carried on at the Hooper Foundation for Medical Research.

The Carbohydrate Content of Thrice Cooked Vegetables for the Diabetic. Pearl Pemberton, 1919.

Value of Whale Meat as Human Food. Edith L. Brown, 1918.

The Biological Value of Wheat and Almond Nitrogen. Alice M. Heinz, 1918. (See *Jour. Biol. Chem.*,vol. 37, Feb. 1919.)

The Extraction and Purification of One or More Proteins from California Almonds. Elizabeth Bridge, 1916.

Note: Further studies now under way: a, Van Slyke separation of amino-acids in a globulin and an albumin isolated from the almond. b, Nutrition studies with mice using these purified proteins as sole source of nitrogen.

The Relation of Blood Creatin-Creatinin to Arginin. Marguerite Johnson, 1919.

Isolation and Identification of Inulin from the Globe Artichoke. Ruth Okey and Anna W. Williams, 1920.

Metabolism of Women as Affected by the Menstrual Cycle. Ruth Okey and Maybelle Eager, 1920.

Studies on Vitamins, 1920 and 1921. Distribution of Fat-Soluble Vitamin between the Fat and Watery Phases of Milk, using Albino Mice. Studies upon vitamin content of dried fruits using same technique are under way.

Department of Household Art

Home Economics from the University Standpoint. Saides Ethel Stark, 1916.

An Elementary Course in Millinery. Florence Zander, 1920.

Studies in Stage Setting and Design for Costume. Dorothy Eurilla Wilkinson, 1921.

Egyptian Character in Stage Setting and Costume. Illustrated by Aida. Alice Robbins Humphrey, 1921.

THE UNIVERSITY OF MISSOURI, COLUMBIA

Hygiene of Underwear. Florence Caton.

Experiments in Cake Making. Nita Collier.

Temperature Inside the Jar During Canning. Louise Stanley and Ethel Gildenhaus.

The Thermal Death Point of Bacillus Botulinus in Canning Spinach. Louise Stanley, Ethel Gildenhaus, and Mrs. Abbott.

Effect of Blanching Before Canning on the Appearance, Keeping Quality, and Nutritive Value of Some Typical Vegetables. Louise Stanley and various students.

Effect of Baking Powder on the Specific Volume of Cake. Louise Stanley and Nita Collier.

The Influence of Cooking and Canning on the Vitamine Content of Foods. Louise Stanley and Bertha Whipple.

FLORIDA STATE COLLEGE FOR WOMEN, TALLAHASSEE

Studies in Nutrition and Experimental Cookery. Ella M. Woods and Juanita Darrah.

PURDUE UNIVERSITY, LAFAYETTE, IND.

Hitherto Unreported Experiments with Different Fats in the Making of Cakes and Pastry. Hannah Osborne and Amy Bloye, under direction of Mary Mathews.

(*To be continued*)

FOR THE HOMEMAKER

MAKING A SUCCESS OUT OF FAMILY LIFE

"What is success and how are the great number of families living on the avarage income in this country to win it?" asks Mrs. Mary Hinman Abel in her new book, "Successful Family Life on the Moderate Income," and there follows a discussion of the problem from almost every viewpoint, which can hardly fail to help the "million and a half families in this country in 1910 with incomes of $1400 to $2000 a year, a sum that is equivalent in buying power to probably $2500 to $3500 more or less in 1921. . . . . there should perhaps be added to (this group) many families with somewhat larger money incomes . . . . all families, in fact, in which the financial margin above the minimum is only enough, when supplemented by the housewife's full time service, to secure some freedom in ordering the life."

One of the interesting things in the book is an outline of the "four conditions for success" which are as follows:

1. The money income of the family tolerably certain and earned wholly or chiefly by the man.
2. A fair start in life for the heads of this household, including wholesome home training, education, both general and vocational, and money enough, or things of money value, furnished chiefly from their own savings, to enable them to meet with courage the financial problems that present themselves, especially in the difficult early years of married life.
3. The right attitude of the woman of the family towards her part in its success, with a growing capacity to meet its requirements.
4. Generous help on the part of the community in promoting the success of the family.

What are the "higher values in family life?" Mrs. Abel in her chapter on this subject sums it up as follows:

The establishment of the family group will be influenced by the standard of living at any given time, and the plan of life which includes "family building" would seem to be the one which offers the best promise of permanence and success. No contribution to family life is so great as that offered by the

child, and all adults should have some relation to a home in which there are children. Adoption, either outright or partial, is the privilege of those to whom childhood makes a strong appeal, and is to be strongly recommended.

In regard to the "start in life," Mrs. Abel brings forth a rather new idea when she says that *the girl must save.*

Men, are more apt to take for granted than are women that they must work hard and save for the home they hope to have. It is, however, equally incumbent on the girl who is now entering all manner of occupations and demanding a man's pay. But in many cases she is still under the spell of a former time when she expected to be "supported" after she married, and she does not save as the man saves. The young woman, as well as the young man, while paying out of her earnings a fair share toward the home living expenses, should be able to start the collection of books, to buy her pictures or pieces of furniture, a rug, a musical instrument, and to begin a bank account, and she may feel that, whether she marries or not, a home with its cherished possessions, slowly accumulated and reflecting personal taste, will still be necessary to her happiness.

Should the woman have control over the family money? Mrs. Abel says:

Very early there should be a complete understanding between husband and wife as to income, property, debts, and financial plans for the future. Just as the man engages to provide the necessary funds, the wife should feel it her duty to study her work and make ready to carry her responsibilities.

They should make out together a plan of spending and there should be consultations over weekly or monthly bills with a view to improving the plan and noting whether theories are being carried out in practice.

The housewife should adopt a simple method of keeping accounts and she should enter her purchases daily. She must sum up and balance with tolerable exactness, but she should not worry over small sums that have been forgotten; it is better to enter them in the "unclassified" or sundry column.

She will study her weekly or monthly summaries with a view to improving the apportionments made and to examine into the wisdom of her purchases, and she must classify the most important outgoes, as for food for the family per week and month. Criticism of results is the important thing and it makes possible a better plan of spending for the year or years to come.

The housewife should have the actual command of money that has been agreed on as necessary to meet expenditures, either cash in weekly installments, or a joint bank account on which both she and her husband check, or, better still, a bank account in her own name, for the possession of the bank book adds to the dignity of her position and to her sense of responsibility.

Should a woman work outside the home after she is married? This is a important question and Mrs. Abel gives an exceedingly fair consideration of it in her chapter, "The Housewife's Contribution to the Family Income Through Housework." She says:

In comparing these two ways of money earning we are not concerned with which is the more honorable, that question belongs to a past-and-gone attitude toward labor; we are concerned simply with a comparison of values . . . . the woman who adds to the value of raw materials by making them into the finished product in her own home, as seen in the cooked food or the finished garment, or by renewing the service of articles as in washing dishes or cleaning, seems to have at present certain advantages over outside labor which is offering the same service:

1. Since the house exists and is conducted for the general purposes of family life, the housewife is not obliged to add to the price of what is manufactured in the home certain "overhead charges," which must be paid by business and added to the price of the finished product as sold.

2. The fact that what she produces in the home is consumed there, cuts out transportation charges, except those connected with the assembling of raw materials.

3. The time-factor, which on account of the high price of labor is the heaviest charge on outside business, is not, in the housewife's case, to be put at the same high figure, since part of her time is always necessary in her household for other than economic functions, and she "works in" to a certain extent her odds and ends of household arts. To make a complete comparison on this important point more facts are needed than we now possess.

4. There are many other economic factors to be taken into account, such as the superior efficiency of the home worker who is impelled by self-interest to improve methods and to use materials with economy, and who, on account of the variety and interest of her tasks, and the command over her time which enables her to plan periods of rest, can work longer hours without fatigue than can the woman in business.

5. There seem to be many non-economic reasons for retaining some of the household arts in the individual home, such as the control over healthful conditions requiring personal vigilance, the development it affords to the worker and the educational value of the household "plant" in the rearing of children. To make her necessary contribution to the family income by doing the work in her own home seems at present to be the only way by which the woman of small means can keep up her intimate relation with the family and perform her valuable non-economic functions.

These comparisons apply for the most part only to town and city life; in all rural communities, where nearly one-half of our population lives, indi-

vidual housekeeping must still be the rule and most of the household arts be performed at home. . . . .

On higher income levels many factors enter into the decision, as the money rewards of the occupation, the interest and zeal that the woman has for her work, and chiefly the character of the work itself, as to whether it is easily combined with home life, leaving her enough time and energy for what society requires of her in that relation. The woman lawyer, physician, architect, writer, actress, and others of the more highly skilled and paid professional careers, will in many cases, continue their work or return to it after a time. Their high earnings will enable them to obtain the services of the few really qualified people who are available for housework and for the care and education of little children. Even in these cases it may be best for non-economic reasons for the woman to devote her whole time to the family if the earnings of the husband are sufficient for its support.

One would scarcely expect a book so definitely devoted to economics of the household to avoid discussion of the family budget. It is frankly considered in Chapter XIII, which begins by stating that "technically, the budget, whether of a nation or of a family, is concerned with dividing up the estimated income *before the money is spent.*"

In regard to savings, Mrs. Abel calls attention to the fact that the Government budget suggests that the family of five receiving $2400 income can save 11 per cent of it, or $264. "This saving fund," she says, "may be assigned to many different uses." These, which include savings-bank deposits, life and accident insurance, buying of a house and furniture, and education, are discussed more or less in detail.

THE QUESTION BOX

Question: Does freezing, especially continued freezing, affect the vitamine content of canned food?

Answer: So far as we are aware, there are no published reports showing the effect of extremely low temperature on the antiscorbutic and antineuritic vitamine. Recent work indicates that vitamine destruction is the result of oxidation. Low temperatures alone, therefore, would produce no untoward effect on the vitamines of foods. Davey (*Bio. Chem. Jour.*, 1921, 15: 83) during an investigation dealing with the antiscorbutic vitamine, held citrus fruit juices for several months at minus 3°C. and minus 5°C., and observed that the potency of the antiscorbutic vitamine was in no way impaired.

EDITORIAL

Reasons for Membership in the American Home Economics Association. There are more than 10,000 home economics teachers in addition to the hundreds of extension workers and other home economics graduates in various allied fields. Of these workers about 1600 belong to the American Home Economics Association. We wish to secure for our chosen profession rightful recognition among professions and professional people. Such recognition comes only through support within the profession to the end of efficient organization and management. In so young a profession standards are set up and maintained by a strong association; in turn the Association needs the help of all progressive members in the formulation of constructive forward-looking policies.

The Association through its state organizations, state and national committees, and publications is a clearing house for information of value to home economics people; it is a means of contact between the teacher and the administrator, between workers in the same field in every section of the country; it furnishes a bond of sympathy between those who are already established and new members whose development will be followed with interest. To the home economics women in the commercial world the Association offers a medium for dissemination of information as to the contributions they can make to all other phases of the profession with the high standards they have set. This will secure for them the support and assistance of the profession. The homemaker should join the Association of the profession dealing directly with problems which have to do with home and community life. Only as we get the ideas of the homemaker who is in daily contact with these problems can the profession render its greatest service.

The Homemaker and the Homemaker's Department. At a recent alumnae gathering of home economics women in one of our large colleges one whole session was devoted to the discussion by homemakers of their problems. This is as it should be, and the JOURNAL pleads for similar discussion in its department for the homemaker. Workers in foods and nutrition contribute of their work; those whose interest is in textiles, institutional work, social service, or extension present results of their experience or study for the benefit of others similarly interested.

All of these subjects interest the homemaker and she is the person who puts into practice the findings of all other workers. Is it not time that she contributed her share of ideas for the improvement of living conditions in the home and the community? Hundreds of women trained in home economics are homemakers. Many problems come from the home; the solution should come from the home and the profession working together. Help to make this a department *for* the homemaker *by* the homemaker!

Obesity and Diet. Fat "cures" are quite the thing. If every popular magazine writer has not yet told the reading public how he got rid of his extra pounds, it is no doubt because he is still in the act of writing his story. Several of the city presses have been furnishing hilarity to their readers with daily accounts of weight reduction races by the overfleshy. In some instances the city Health Departments have even directed these contests.

The amusing features of weight reduction are apparent but there is also serious reason for ridding oneself of excessive fat which probably does not occur to the layman. Life insurance statistics have long shown over-weight to be a liability and not an asset. A more tangible reason for keeping oneself reasonably lean, especially after middle age, is pointed out by Joslin.[1] Diabetes is the penalty for obesity; if there is any diabetic tendency whatever on the part of the individual, overweight is the only encouragement needed.

Nine hundred and ninety-nine of every one thousand fat people are overweight because they eat more food than they need and for no other reason. The other one case of obesity which may be caused by some functional disturbance is not being considered in this discussion. The person who thinks he eats so little and yet becomes or remains so fat may have an energy requirement much lower than he suspects. There are not yet methods of measuring energy expenditure in all the possible activities of a normal individual's day. Only the performances which can be confined within a small chamber are measurable. Therefore it is possible to miss the actual heat expenditure by several hundred calories when it is calculated or estimated from such meager data. If only one hundred extra calories of food over and above the amount used are consumed daily, it may mean an increase of body fat of almost ten pounds yearly.

[1] Joslin, E. P.: The prevention of diabetes mellitus. *Jour. Amer. Med. Assoc.*, 1921, 76: 79.

He who would reduce should first study food composition and food values. A reduction method can be effective only when it decreases food intake or increases energy output; if it does both at the same time it is all the more effective. However, going to extremes in indiscriminate dieting and fasting without medical supervision may have its dangers. Folin and Denis[2] found that acidosis developed to a noticeable extent in some very obese subjects after four to five days of fasting. By intermittent fasting they were able to increase the power of the body to burn its own fat without the appearance of beta-oxybutyric acid. Apparent failure of a dieting treatment, Grafe[3] says, may be because of an undue retention of water by the body tissues even after considerable fat has been burned away.

The annoying thing about most reducing schemes is that they interfere with one's pleasurable habits of eating and living. The originator of one much advertised plan claims to have made the astounding discovery that food does not make fat! His followers, he avers, are allowed to eat. A lively sale of these lessons can safely be predicted though there is doubt whether the would-be reducer has spent his money wisely.

SYBIL WOODRUFF.

THE OPEN FORUM

To the Editor of the Journal of Home Economics:

The plea for a definite stand by the home economics profession on the question of uniformity in measuring apparatus and standards, voiced in the editorial appearing on page 614 of the December JOURNAL, interested me very much.

When a member of the home economics staff of the University of Washington at Seattle, I was perplexed with the inconsistencies in the measuring apparatus used in the food laboratories which had been under my observation up to that time. Early in 1917 I started inquiries to discover if this condition was quite general throughout the schools of the country. The investigation was carried far enough to show that apparatus was always inaccurate and there was a general lack of standardization and uniformity. More urgent matters interrupted a plan to gather concise data on the subject and present it to the JOURNAL with a plea

[2] Folin, O., and Denis, W.: On starvation and obesity with special reference to acidosis. *Jour. Biol. Chem.*, 1915, 21: 183.

[3] Grafe, E.: Pathology and treatment of constitutional obesity. (Abstract). *Jour. Amer. Assoc.*, 1921, 76: 486.

to the home economics profession to foster the manufacture of accurate standard measuring apparatus, and influence its adoption in all home economics food laboratories.

There is probably no question in the mind of any one of us as to the status of the measuring cup in general use at this time. The following certificate, signed by the Chief Sealer of Weights and Measures of the State of Wisconsin, shows in detail the cubic centimeter capacities of seven cups representative of those used, in many cases indiscriminately, in home economics laboratories and homes throughout the country.

Household Measuring Cups

	ONE-FOURTH	ONE-HALF	THREE-FOURTHS	FULL	ONE-THIRD	TWO-THIRDS
	cc.	*cc.*	*cc.*	*cc.*	*cc.*	*cc.*
Cup A*	55	125	193	277	75	173
Cup B	57	122	189	260	80	166
Cup C	53	112	170	245	73	148
Cup D	50	110	145	233	71	170
Cup E	67	127	187	240	97	167
Cup F	55	120	180	245	70	158
Cup G	65	120	180	240	83	158

(Signed) GEO. WARNER,
Chief Sealer of Weights and Measures.
Madison, Wisconsin.

A and B, made of tin, have total capacities respectively of 40 cc. or 17 per cent and 23 cc. or 9 per cent in excess of the 237 cc. capacity of the standard U. S. one-half pint. C, of aluminum, and F, of glass, are 8 cc. or 3 per cent in excess of standard. The separate sections of these cups are irregularly inaccurate. D and E, of aluminum, and G, of glass, show the least tolerance; D, "Wearever" is 4 cc. or 2 per cent deficient, and E and G, 3 cc. or 1 per cent in excess of the standard capacity. (The tolerance for a graduate of the same internal diameter as G, allowed by the Wisconsin regulations effective after January 1, 1921, is about 1.6 cc. or 0.6 per cent.) The sections of D, however, are irregularly inaccurate; E has this same fault and is even less dependable because the total

*A. National Enameling Stanping Co., Milwaukee, Wis. (Tin.)
B. Not indentified as yet. "Perfection" stamped on side.
C. West Bend Aluminum Co., West Bend, Wis.
D. The Aluminum Cooking Utensil Co., New Kensington, Pa.
E. Aluminum Goods Manufacturing Co., Manitowoc, Wis.
F. Indiana Glass Co., Dunkirk, Indiana. (Unfinished cup; no lip.)
G. Hocking Glass Co., Lancaster, Ohio. (Lip.)

capacity of the cup is not determined by the top edge. G, which is selling at retail for 10 cents and may be bought for $7.20 per gross, less 10 per cent discount, is the least inaccurate as to section capacities. The lowest quarter division is 5 cc. or 8 per cent in excess as figured on the basis of the actual total capacity, and the second quarter is the same amount deficient; the lowest third is 3 cc. or 4 per cent in excess; the middle third, 5 cc. or 6 per cent deficient; and the upper third, 2 cc. or 2 per cent in excess of standard.

Since the inaccuracy of cups now obtainable on the market is a recognized fact, the first step to take toward the establishment of uniformity would be, presumably, to determine a suitable cup in regard to material and pattern and effect its manufacture in accordance with determined standards.

All graduated tin measures are barred from commercial usage by regulations of Federal law and laws of many states. It is almost impossible to fill the measure to exactly the same point each time and it is difficult to read such measures correctly. The same difficulties apply equally to enamel or aluminum graduated measures. The glass graduate can be easily and correctly read and is used exclusively for commercial purposes. Would it not seem advisable to consider a material which gives the greatest accuracy in use?

Glass is a poorer conductor of heat than is enamel, tin, or aluminum, and so the disadvantage of an overheated handle in the measurement of hot liquids is not experienced with a glass cup. Glass is easier to clean and retains its new appearance with less care unless actually chipped or broken.

It seems probable that accurate molds for glass cups can be made, for chemical and pharmaceutical glass graduates of tested accuracy are in common use. Evidently the price of such an article made of glass need not be prohibitive for general laboratory use, for the glass cup G, has as low a retail selling price as any on the market and is the least inaccurate of those tested. By using a chemical glass resistant to heat, the fragility of glass would be reduced to a minimum and that objection might be disregarded.

As to the pattern of the cup: shall it be made of a size similar to those now on the market with height and internal diameter approximately equal, or shall it tend toward the size specified by the Bureau of Standards, that is, with "the ratio of length of the graduated scale to the internal diameter not less than five to one?" Shall it have a pouring lip

or shall it not? These matters should be carefully considered and later be taken up with the designer and manufacturer.

Would it not be expedient for the JOURNAL to give the whole matter further publicity and through a committee supported by the American Home Economics Association consider the matter thoroughly and take it up with the proper commercial concerns? Later when a suitable cup is on the market at a reasonable price, it would be simple enough to gain its adoption and arrive at uniformity in this detail of scientific measurement, the neglect of which has given it undue importance.

Some correspondence has been appended.[1] The letters from the Corning Glass Works merit special attention. They have shown their interest in the matter and may be ready to make definite plans if approached by those in authority. The ready-made advertisement which would be given their ware would no doubt influence their decision.

I hope that this may give the pursuance of the project greater momentum.

KATHARINE MARTINDALE,
237 S. Tenth St., La Crosse, Wis.

A Student Cost of Living Study was made this year by graduate students in Household Economics at Teachers College, Columbia University, under the direction of Dr. Benjamin R. Andrews. This study, which is published in a forthcoming issue of the Teachers College Record, showed that the cost of living for 76 senior and graduate women students in Teachers College last year varied from $741 to $1995, with the median cost $1243 to $1251. One quarter of the group spent less than $1121 and one quarter spent more than $1444, so that one half of the group spent between these amounts. These totals include all expenses with the exception of railroad travel. The median costs for various items were as follows: fees paid to the college, $295 to $298; living expenses, $511 to $515 (room, board, laundry); clothing, $231 to $235; miscellaneous—all other expenses at college, $200; railroad travel, $82 to $85.

Dr. Andrews is interested in securing similar costs from other institutions and will gladly send blanks showing the method of making the study to any who may be interested. Such a study is of value to the students and to the college in which it is made, since inquiries as to living costs are frequent from prospective students.

[1] Correspondence with cookery departments of various universities and with manufacturers of glass and aluminum cooking utensils.

BOOKS AND LITERATURE

Public Health Surveys. By MURRAY P. HORWOOD. New York: John Wiley and Sons, 1921, pp. 403. $4.50.

This book is a valuable contribution to sanitary science. The clearness of expression and detailed treatment of problems confronting the public health surveyor, together with descriptions of what ideal conditions should be, make the volume especially useful to students in public health.

A pleasing foreword by the late Professor William T. Sedgwick and an introduction by Professor George C. Whipple of Harvard Engineering School, emphasize the importance and general principles of public health surveys.

The first four chapters contain general information about public health surveys and deal with fundamental problems of community organization and methods employed in making surveys. This is followed by six excellent chapters on problems of sanitation, with helpful discussions and illustrations. The subjects of school sanitation, school hygiene, organization and activities of the health department, hospital facilities, tuberculosis, vital statistics, and analysis of city budget are each discussed in separate chapters, but insufficient consideration is given to the control of communicable disease, infant hygiene, nursing, and public health laboratories. It is also felt that the subject of tuberculosis receives inadequate treatment for such an important problem. Instructive chapters dealing with the preparation of reports of public health surveys and methods of obtaining results from them, together with a discussion of the value of such surveys in the public health campaign, conclude the volume.

In so far as it deals with sanitation this book is excellent and should prove a useful guide in teaching what public health surveys are and how they are made and used.

IRA V. HISCOCK,
Yale University.

Make Your Own Hats. By GENE ALLEN MARTIN. New York and Boston: Houghton and Mifflin, 1921, pp. 111. $1.50.

Every woman is vitally interested in being well dressed with a minimum expenditure of time, energy, and money. Of all parts of the wardrobe, the hat offers one of the greatest problems for a person with no training in millinery. Mrs. Martin has given in her book, an inspiration for anyone to try to solve this difficulty by learning to make her own hats.

The book contains a foreword which deals with the application of principles of costume design to hats, and several suggestions for the purchasing of ready-to-wear head gear. The subject matter of the main text covers practically all the construction problems which confront the beginner in millinery, and the directions are written in a very clear, definite style. The few illustrations which the book contains are carefully chosen and are easily understood. Many different methods of procedure from those of the average millinery textbook are advocated which seem sound and practical, and any person should be able to obtain good results if the directions are accurately followed.

Teachers of millinery will find this book a valuable addition to their reference libraries.

MARY C. WHITLOCK,
University of Illinois.

Personal Account Book of —— Pupil, —— School. By FRANCES R. KELLEY, Minneapolis Public Schools.

Miss Kelley has brought out a pupil's account book which will interest home economics teachers everywhere as providing a valuable teaching project. The book is put in the hands of the individual child for his or her personal expense and clothing record. It includes first a general account with columns for income from earnings and gifts, and columns for savings and for expenditures of various kinds. Savings is

properly put ahead of expenditures in the account form, as the only way to save is to save first. The expenditure classifications include food, clothes, education, pleasure, carfare, gifts and miscellaneous. One might suggest the desirability of including here "social welfare contributions" as a heading. The general account is followed by an appropriate monthly summary form. The last half of the book is a clothing account with items for ready-to-wear clothes and clothes made at home, for millinery, shoes, and miscellaneous. An appropriate summary is provided for the clothing account with a classification into underwear, indoor wear, outdoor wear, millinery, shoes and repairs, miscellaneous.

Miss Kelley is to be congratulated on this piece of work. Several cities are now requiring pupils in the upper grades and high schools to keep personal accounts as part of their work, and the requirement is a commendable one.

BENJAMIN R. ANDREWS.

Manufactured Gas and Natural Gas Situation in Pennsylvania represents a coordination, under the direction of Samuel S. Wyer, of Federal and State agencies, to spread accurate information and create a correct public opinion on the gas situation. Arrangements have been made whereby this pamphlet will be used in the Pennsylvania public schools. It is written from a resource viewpoint, directing existing facilities to the solution of a pressing present and future problem.

The Syracuse Home Bureau Food Calendar is a calendar by courtesy. It was prepared to meet the needs of the many women who are in touch with the Home Bureau and who expressed the desire for suggestions as to meal planning by the week. The first page contains a "Key to Meal Planning" with the ordinary foods divided in groups and with a brief discussion of each group. Menus for five weeks of cold weather and for five weeks of warm weather follow. These menus may be followed exactly, but they are given rather as examples of meals for a week planned with the food groups in mind.

Following the menus are about five hundred recipes under such headings as Fruits, Vegetables, Hot Breads, Yeast Breads. There are from ten to thirty recipes under the various headings and they are all tested Home Bureau recipes which will serve five persons.

In the estimation of those who use the calendar daily the hole punched at the bottom of each page which allows it to be fastened open at any place is a great advantage. No greasy finger marks on the pages of the Home Bureau Cook Book!

EDITH BARBER.

The Illinois Food Calendar which was prepared two years ago by Nina Crigler is still proving that it is a practical working basis for the busy housewife who would know whether or not she is planning a balanced diet for her family.

The particular value of this food calendar is its simplicity. The person who has not had technical training can use it successfully. The calendar has been very popular in connection with the establishment of the hot lunches in the rural schools. The children have been enthusiastic about keeping it, and the boys quite as interested as the girls. It has been used in nutrition classes to interest the children in bringing their weight up to normal, and has been of valuable assistance in carrying out the health project.

The calendar has also been used in launching the food selection project in connection with the home economics extension work. In one county where 440 food calendars were used in Home Bureau work, the home adviser has reported that 90 per cent of these women are giving more attention to meal planning. One of the outstanding results of checking the food calendar has been the increased use of vegetables and fruits, and a wider realization on the part of the women that milk as a food is comparable to meat in value and could take its place in a diet. They have been able to complete this phase of the work without becoming lost in a sea of scientific facts and new terminology.

KATHRYN G. VAN AKEN.

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NEWS FROM THE FIELD

THE "HOME ECONOMICS SPECIAL" TO CORVALLIS

Since the announcement, in the March JOURNAL, that the Home Economics Association is making arrangements for a special train, Chicago to Portland, a surprising amount of interest has been shown in the plan. The Special train can be made a decided asset to the Annual Meeting. The advantages are numerous.

1. The sleepers will not be overcrowded; the diner, club car, and observation car will be occupied only by our own party.

2. People gathering at centralized points can travel to Chicago or Minneapolis in special car parties. These cars can then be attached to the special train.

3. The days together on the "Home Economics Special" will give an opportunity for making and renewing acquaintances, for increased sociability and a genuine good time before the meeting begins.

4. The scenic attractions are unsurpassed in America. The route chosen is the "Burlington"—Chicago to Minneapolis; the "Great Northern"—Minneapolis to Portland. The Burlington between Chicago and St. Paul has been called "The Mississippi River Scenic Line." Beyond St. Paul, the Great Northern follows the west bank of the Mississippi through the picturesque section of the Lake Park Region of Minnesota, to St. Cloud. From Havre westward to the Rockies, there lie vast plains and cattle country. The crossing of the main ranges of the Rockies and their intermediate valleys includes mountains and river scenes of remarkable grandeur. Adjoining the big ranches of the cattle country is the Blackfeet Indian Reservation. To the west, lies Glacier National Park where a two-day stop-over has been arranged. Spokane is a short distance beyond Glacier Park. From this point, the line traverses the Wenatchee Valley, climbs the Cascade Range, and loops down the Pacific slope to Puget Sound, whose shoreline it follows to Seattle. It is an over-night ride down a beautiful valley near to the foot of Mt. Ranier, into Portland.

The schedule, Chicago to Portland, is as announced on page 152 of the March JOURNAL. The Portland business and civic organizations have planned an auto trip around Portland and up the highway, starting about 9: 30 a.m. July 31. This day promises to be one of the most interesting and delightful features of our entire entertainment.

The cost of this trip from Chicago, including round trip railroad ticket, sleeper from Chicago to Portland, meals en route, and two days' side trip in Glacier Park, will be approximately $150. The expense to be added on the return journey will depend largely upon the route selected and the length of the stay on the coast.

Complete details regarding returning routes, the cost of round trip tickets from the principal cities, as well as instructions for the purchase of tickets will appear in the May JOURNAL.

Address any questions to Nina Streeter, Chairman, Travel Committee, 1370 East 54th St., Chicago.

Reservations for accommodations during the Convention should be made with the Director of Dormitories, Oregon Agricultural College, Corvallis, Oregon, at as early a date as possible.

THE FARM HOME AND THE NATIONAL AGRICULTURAL CONFERENCE

Farm women and farm homes had a place in the great National Agricultural Conference called by President Harding January 23–27 at Washington.

The matter to be considered by the committee on rural population and the farm home was the part the farm home plays in the national policy, attention being directed to the farm

home as a living place, the farm standard of living, rural housing, and the wife's partnership in farming enterprises.

Out of 26 women from 21 states invited as official delegates, 18 accepted. The chairman of the committee on the farm home was Mrs. J. C. Ketcham, of Hastings, Michigan, who has served on important committees of the American Farm Bureau Federation and of the National Grange. The other women members of the Committee were: Mrs. Nellie E. Blakeman, of Oronoque, Conn., a member of the home economics committee of the National Grange; Neale S. Knowles, of Ames, Iowa, State Leader of extension work with farm women; Mrs. W. A. Mather, of Adams, N. Y., a member of the New York State Executive Committee, Home Bureau; Mrs. Charles W. Sewell, of Otterbein, Indiana, a leader of state movements for home betterment; Mrs. Carl Williams, of Oklahoma City, editor of an agricultural journal. The three men members were: Bradford Knapp, dean of the state agricultural college, Fayetteville, Ark., George Martin, Editor of Farm and Fireside, New York City, and W. J. Thompson, South China, Maine, Master of the State Grange. Agnes Harris, Office of Extension Work, U. S. Dept. of Agr., acted as secretary of the committee.

Mrs. Ketcham and Mrs. Sewell presented the report of the committee to the main conference. The recommendations were as follows:

(1) Agricultural and economic conditions largely determine the standards of living in the farm home. Economic reforms along the lines of coöperative marketing and finance are readily translated into better homes. While working along economic lines every effort should be made to maintain good standards of home life and to stress those ideals of high type homes that shall give to rural life the satisfaction, attractiveness, dignity, and power to which it is justly entitled.

(2) Recognizing that the farm home is the heart, not only of American agriculture, but of the nation as well, we strongly urge that its power and influence be fully appreciated and used, through the appointment of farm women as well as farm men to official positions in farm organizations, and through the selection of farm women for service on important National and State boards. The equal representation of country and city homes will add to the dignity of country life and serve to bring about a better understanding between country, town, and city.

(3) We realize that the morale of the farm families must be kept up and that the first and most important means in accomplishing this is self-help. This should be supplemented by the enthusiasm which comes from united effort in community groups and organization, and the aid of the church, the school, the extension service, and all other forces effectively coöperating in an earnest endeavor to do worth while things as they come to hand, working toward ultimate relief through every means recommended by this conference.

(4) In view of the growing demand for educational assistance from the extension service of the State Agricultural College, because of an increase in the groups of farm families associated together for mutual help, no matter under what names, a greater number of public extension workers is needed, especially in the interest of the farm home. We subscribe cordially to the principle that all extension workers should be employed only with public funds and should serve with equal zeal all groups or organizations of people without distinction. Extension work should be a public educational service for rural people.

(5) Recognizing the excellent organized work that has been conducted by farm men and women in many communities, we strongly recommend that agricultural organizations emphasize in their definite programs a study of food, clothing, housing, child care, and higher life as related to the high standard home, which is our goal.

(6) In view of the fact that farm tenancy is seriously increasing and thereby endangering the stability of the farm home in some sections of the country we wish to encourage farm ownership.

(7) We desire to commend Congress and the President for the passage of the Maternity Act.

(8) We endorse the Home Economics Amendment to the Federal Vocational Educational Act.

(9) Assured that the future of Agriculture depends upon the training of farm boys and girls for farm home and community life, we recommend such training as a vital factor in development of leadership, community spirit, coöperative study, and the use of new and improved methods in agriculture and social life in the country. We urge that farm men and women take an active part in the organization and maintenance of some type of group work for boys and girls, that by this method the joys and dignity of agriculture as a profession can be developed as in no other way.

(10) We strongly recommend the conservation of the American farm home. It offers the best opportunity for the development of ideal family life in which the farmer and his wife are equal partners in work, social life, and business and in which the children have an opportunity to become junior partners in the management of the farm and home.

Other women who were delegates to the Agricultural Conference and the committees on which they served were as follows: Farm Population—Mrs. H. F. Chaffee, Amenia, North Dakota, Mrs. L. C. Chapple, Lykesland, South Carolina, Mrs. J. W. Jones, Olney, Maryland, Mrs. W. C. Martin, Dallas, Texas. Transportation—Mrs. Frank M. Black, Myersdale, Pennsylvania. Marketing of Farm Products—Mrs. Edward P. Costigan, Washington, D. C., Mary E. Pennington, New York City, Mrs. Russell Tyson, Chicago. National Forest Policy—Mrs. Maude Wood Park, Mrs. B. John Black, Rosyln, Maryland, Mrs. Albert Manning, Otisville, New York, Mrs. Thomas G. Winter, President Federation of Women's Clubs, Minneapolis.

ARIZONA

The University of Arizona. Adelaide Baylor, of the Federal Board for Vocational Education, recently visited the University of Arizona, to study the teacher training courses given at this institution in vocational homemaking.

The Foods and Nutrition Department is carrying on a series of rat feeding experiments to show the possibilities of such experiments in teaching nutrition classes and in home demonstration lectures.

Students in nutrition have organized a health class in one of the public schools of the city. They have the hearty cooperation of the city superintendent of schools, the principals, and the school nurses.

CALIFORNIA

California Home Economics Association. The perfection of our share in the regional plan for national organization has occupied the "leisure" of the State Council members.

A visit from Miss Weigley in November helped greatly to clarify our difficulties, and the president is happy to report that state affiliation under the regional plan is effected with the forwarding of a check from the treasurer to the amount of $171. This sum will be larger next year since units within the sections are organizing.

Home economics teachers everywhere are awakening to the tremendous value of organization. We now have a Bay Section, a Central Section, a Southern Section, and requests have come for assistance in organizing a Northern Section.

California has pledged $680 in contributing and sustaining memberships toward the Executive Secretary Fund of the American Home Economics Association.

FLORIDA

Florida Home Economics Association. The Home Economics section of the Florida State Educational Meeting held its meeting on December 29th, with Lucy Cushman, State Supervisor of Home Economics, presiding. The program follows: How to Interest High School Girls in Home Economics, Adelaide Baylor, Agent for Home Economics Education, Federal Board for Vocational Education; Affiliation of the Florida Home Economics Association with

the American Home Economics Association, Harriette Layton, Assistant State Home Demonstration Agent; A Place for the Commercial Home Economics Workers in the National Home Economics Association, Mary Keown; Round Table discussion, led by Mrs. George Atkinson, Dean of Home Economics at Florida State College for Women.

ILLINOIS

The University of Chicago. Arrangements have already been made for a number of outside members of the faculty for the coming summer quarter, in addition to all the regular staff. Among others may be mentioned Pearl Ruby now assistant professor of home economics at Kansas Agricultural College, formerly in charge of the A. R. C. nutrition work in Wichita; Florence Williams, supervisor of industrial arts in Richmond, Ind., and one of the authors of the monograph, Home Economics in American Schools; and Regina Friant, formerly supervisor of vocational home economics in Missouri, now taking graduate work at the University.

Miss Ruby will teach elementary nutrition and dietaries and will work with Miss Roberts in the Child Health School; Miss Williams will give courses in costume design, and Miss Friant in methods of teaching food and nutrition and home management.

The Art Institute of Chicago has conducted, through its extension department, the Better Homes Institute in upward of 100 cities. The institute is an organized project for community welfare, and is under the direction of Ross Crane, head of the extension department, and Mrs. P. A. Spaulding, organization manager.

KANSAS

Farm and Home Week at Kansas State Agricultural College. The week of February 6 to 11 was Farm and Home Week, and the entire college plant was placed at the service of the visitors. Under the direction of Dr. Helen B. Thompson, Dean of the Division of Home Economics, a four-day short course in home economics was given. Addresses and discussions covered a wide range of subjects of interest to women. Dr. Louise Stanley, University of Missouri, told of important legislative measures affecting the home. Prof. Louise Glanton reported on a survey of clothing purchasing habits in Kansas, and the students gave demonstrations on clothing selection and construction standards. Miss Crigler and Mrs. Sewall discussed the possibilities of home demonstration work. Miss Kneeland urged the use of budgeting—an account book for Kansas homes. Child health was not neglected; Miss Leazenby reported the work of the health center, and Miss Ruby the teaching of health to the school child. There were clothing exhibits, visits to the practice house, and talks and exhibits on house furnishing.

There was a special program for the Boys' and Girls' Club Department. The girls gave demonstrations and held contests. There were stunts, playlets, trips around the campus, and visits to the college farm. Plans for the coming year were formulated.

NEW ENGLAND

New England Home Economics Association. The February meeting of the New England Home Economics Association was given over to a discussion of better home furnishings, led by Royal B. Farnum, Principal Normal Art School, Boston. Antoinette Roof, president, was the presiding officer.

The association is offering a course of seven lectures on Mental Development and the Child Welfare Program, by Dr. Abraham Myerson and Dr. A. Warren Stearns of Tufts Medical School, and Prof. Walter Dearborn of the Graduate School of Education of Harvard University.

The Girls' League of the Brookline High School. This league was established last year. Every girl in the high school is considered a member of the league, and each year two members of the faculty are elected to serve as advisory members. At the beginning of this year the committee on advisors

chose sixty picked girls from the Junior and Senior classes. Each of these girls was given four new Freshman whom they were to interest in athletics, glee club, dramatics, honorary society, debating, and all organizations, and to whom they were to explain the rules of the school. This was a great help to the faculty especially at the beginning of the year when each teacher was given two girls on whom she could rely for all errands and messages. The committee on classroom affairs have taken it upon themselves to beautify the school building and to make the teachers' room attractive and they send letters and flowers to girls who are ill. Some discussion among the townspeople as to the dress and appearance of high school girls reacted in the following resolution submitted by the Executive Board of the Girls' League and signed by every girl in the school:

"The girls of Brookline High School should look, dress, and act like high school girls. Peter Pan dresses or any simple woolen dresses, ginghams, shirt waists and skirts (with or without sweaters), or middies and skirts are most suitable for school wear. Georgette waists, or very thin waists of any material are not appropriate for school, nor are sweaters without waists worn by well-dressed, refined girls. Thin silk or fancy stockings are not suitable for morning wear. The girls should not indulge in the use of rouge or in the excessive use of powder. Arranging the hair in extreme styles is not appropriate for a girl of high school age."

"Bad taste in dress and appearance shown by even a few girls injures every other girl in the school. Let us be sure that we, as individuals, do nothing to cause adverse criticism of our school. The finer its reputation, the greater will be our pride as students and alumnae."

NEW YORK

The Home Economics Association of Greater New York. The feature of the program of the January meeting was an address by Mr. Hobart Upjohn, architect, who told of the modern self-help house. His points were illustrated by pictures showing good and poor routing of kitchens, desirable arrangements of windows and doors, and proper placing of furniture. Although the kitchen was emphasized, general principles of step-saving in house planning were given.

New York Wholesale Grocers' Association. At the annual convention of the New York Wholesale Grocers' Association, in New York City, February 15th, May B. Van Arsdale gave an address on What the Public does not Know about Food Distribution. It is a significant recognition of the work of home economics that such organizations as the wholesale grocers, the canners, and the bakers are asking women in our field to talk frankly with them, telling what the women of the country want, and what can be done toward a better understanding between the housewife and the men who handle food for her.

Department of Public Welfare and the Health Exposition. The Department of Public Welfare of the City of New York maintains a number of important public hospitals and chronic institutions, including the Metropolitan Hospital, City Hospital, Home for the Aged and Infirm, and Central Neurological Hospital on Welfare Island; Kings County Hospital, Greenpoint Hospital, Cumberland Street Hospital, and Coney Island Hospital in the Borough of Brooklyn; Sea View Hospital on Staten Island; and the New York City Children's Hospital on Randall's Island.

The Health Exposition in the Grand Central Palace provided exhibits of interesting phases of the development in various branches of municipal departments pertaining to the well-being of the people in general and to the city charges in the various public institutions.

The exhibit contributed by Commissioner Bird S. Coler of the Department of Public Welfare specialized in three phases of its work: (1) The laboratory kitchen work done by dietitians and nurses. (2) Occupational therapy work of patients and inmates. (3) Equipment provided for nurses in training, together with the home and

school atmosphere of a nurse's life while at work or in training.

The laboratory was displayed in an open square, showing typical equipment of a small kitchen. This included a vegetable sink properly lighted, sufficiently deep, and fitted with draining baskets; a new type of dish washer which could be used for sterilizing tray dishes and small utensils; a food mixer with several attachments; the best quality of aluminum cooking utensils, exemplifying labor and food saving for the nurse and dietitian and comprising some of the new forms such as the narrow deep double boiler, the replaceable cold handle on sauce pots; an array of cutlery; suitable tray racks and tray carts with acceptable china and glassware; silver and trays for institutional use, showing ice cream shells used as vegetable dishes because of the lip for handling; celery trays which will carry two or three vegetables for special diets; and other articles such as the individual easily washable salt dish so necessary for sick room service, open sugar basins which can be used for other foods, marmites to keep food hot, proper jugs for cocoa and hot water, and glass and porcelain top tables.

The food shown illustrated the project method of teaching nurses cookery and diet, and typified diabetic and salt free diets, concentrated gruels, malnutrition dietaries, regimes for the overfed, food for the tubercular. A tray contained the materials used in the departmental hospitals for the prescription modification of infants' feedings, including certified milk and without provision for pasteurization or sterilization of the feedings.

The outlines of the course in cookery for students and attendants was explained. Special emphasis was given to the tentative outline under consideration by the American Dietetic Association. The hostesses in this part of the exhibit were thirty dietitians of the Department of Public Welfare.

Flanking the open square where the kitchen laboratory work was displayed, was an elaborate exhibit of occupational therapy.

The nursing department was centralized in a sample bedroom typifying the rooms that the nurses occupy in the various homes for the nurses of the department. Treatment trays and other equipment were shown, and there was a large attendance of nurses ready and always willing to explain the courses in the training schools. The nurses and internes, at various times, gave entertainments, typifying the life of the professional nurse in a large public hospital.

NORTH DAKOTA

The University of North Dakota. North Dakota newspapers are printing testimonials to the popularity and public appreciation of the work in actual child care undertaken by the home economics department of the University. Baby Mary has finished her first year in the practice house. Each girl in the cottage has entire charge of her for 12 days at a time. Her food, mending, and laundry work are taken over by her manager.

This training is considered by the department as an important part of the course in home management. Probably no one aspect of the work has aroused more favorable comment than this practical demonstration of the functioning of home economics training.

OHIO

At East Technical High School, Cleveland a course called "The Home and Its Management" is being offered in the twelfth year by Carlotta C. Greer, Head of the H. E. Department. In this course special emphasis is placed upon buying for the home. This phase of household management is being carried out effectively by means of field trips. Instead of the occasional field trip, in which a number of stores are visited or a number of different articles are investigated at one time, an excursion to one department of a store (or possibly of two stores in the same vicinity) is made each week. For these excursions the usual laboratory period of ninety minutes is allowed. Usually but one article is investigated on each trip. In addition, the pupils taking this course have four 45-minute recitation periods per week. In this way, it is hoped that an effective

knowledge of the quality and value of equipment and furnishings for the home will be gained. The course with this particular emphasis has not been given for a long enough period of time to pronounce it a satisfactory plan; it promises success, however. In a district, such as that of East Technical High School, in which a large percentage of girls on leaving school or on graduating engage in some type of business occupation, specific training in buying for the home appears to be necessary.

Diet Standards of School Children. In Akron, Ohio, it was found that, out of 1,011 children weighed and measured under the direction of school authorities, 58 per cent were underweight, nearly a fourth of these being more than 10 per cent underweight. After two months effort in teaching these children how to improve their diet, 67 per cent had made some gain. The home demonstration agent then met with the mothers to demonstrate the results and to explain how to plan meals. The proper number of hours sleep and other health habits, such as deep breathing and teeth brushing, were also emphasized.

The demonstration was followed by weekly conferences of the mothers with doctor, nurse, and home demonstration agent, at which the health record for the week was examined, the weekly weights taken, and additional instruction and advice given the parents. As a result almost every mother now reports intelligent interest on the part of the children.

SOUTH DAKOTA

The University of South Dakota. This year there has been a rapid development in the department of home economics at the University. Enrollment has increased in all courses, especially in the classes in clothing. Dress forms made by the students have been the center of attraction in the dressmaking classes.

A catering course adds to the attractiveness of the food department. This is an advanced food course offered as an elective, and consists in planning, preparing, and serving dinners and luncheons to a number of people. These are real "company" dinners given by faculty members or residents of the town who are desirous of entertaining their friends and who are willing to pay the department for providing them with expert caterers.

The practice house is another important feature this year. One of the professors consented to board at the house and the girls have the unusual experience of feeding a man.

As a result of the growth of the department, the Home Economics Club has grown also. All the work of the club is planned and carried on by the members.

The Department of Physiology and the Department of Home Economics at the University are cooperating in some experiments along dietary lines.

VERMONT

The University of Vermont. The home economics department, which was opened at the University 13 years ago with Professor Bertha M. Terrill, the present head of the department, as the organizer and only instructor for the first two years, has grown until it now numbers 90 major students of the course, who are candidates for the degree of bachelor of science in home economics, besides minor elective classes from the college of arts and sciences and students of the teacher-training class, who are required to take one year of home economics as a part of their two-year course.

There are now five members on the staff of the home economics faculty at the University, including Professor Bertha M. Terrill, head of the department, Professor Alice E. Blundell, Edna C. Whitcomb, Jessie M. Winchell, and Mary Shallenberger.

Next fall Howard Hall will be used as a practice house. The girls in the home economics department will determine the equipment and arrangement of kitchen and laundry, will plan the refinishing, redecorating, and furnishing throughout, under the guidance of the members of the department staff, who will live at Howard Hall.

WEST VIRGINIA

Farmer's Week at West Virginia University. The part of the program for the women included five classes which met several hours each morning. These classes were landscape gardening, poultry, short cuts in sewing, millinery, and menu planning. The afternoons were devoted to the business of Farm Women's Clubs and the Farm Bureau Federation. Mrs. McClung, retiring State President of Farm Women's Clubs, reported 96 clubs with total enrollment of 2075. There are seven new home central committees and four sub-committees, namely, schools, public health, law relating to and affecting women and children, and recreation. The Farm Women's Education or Loan Fund has on hand the sum of $916 to be loaned to farm girls who cannot otherwise get an education. Poultry raising has been the most extensive work, seventy-five per cent of the poultry work of the state being done by women. Fifty-six demonstrations in poultry by farmers and farmers' wives produced a net profit of $1500. More than 1000 demonstrations in sewing, interior decoration, household conveniences, and foods have been given by home demonstration agents.

At a tea given by the Home Economics Department the guests were divided into groups of fifteen with a home economics major as guide. The guides led their groups to each of the following stops: an exhibit prepared by the class in housewifery, where a student demonstrated the cleaning of silverware; the work of the class in textiles, where a student conducted a test for weighted silk; the work of the class in senior clothing, where six seniors appeared from behind a screen dressed in make-over problems and gave rhymes telling about them; the dietetics laboratory, where a senior student demonstrated menu-making by showing sample meals and substitutes; the apartment, where the freshman students served tea; the clothing laboratory, where a freshman demonstrated the making of button holes on the sewing machine.

WISCONSIN

Better Babies at West Allis, Wis. The new high school at West Allis has a Chase washable doll, complete layette, small wooden bed (made by the boys), tub, basin, towels, and other necessary equipment for a course on infant care. The home economics girls raised the money for this equipment by having a bazaar. At the beginning of each semester, the seventh grade girls are given a detailed demonstration on bathing a baby. This demonstration is prefaced by a discussion of the care of babies so that the girls feel that it is a privilege to care for them. Each girl is given a chance to bathe the doll baby. However, this work covers a semester's time so that it is never monotonous—instead, each time the baby is bathed the girls are delighted and the review is effective.

The infant care course correlates very nicely with sewing, since the sewing now consists of making infant clothes. The girls make such articles as dresses, flannel gertrudes, and flannel night dresses for the poor babies of our city. The garments are simply made with emphasis on flat seams and dainty, inexpensive trimmings. Besides bathing the baby and making a layette, the girls learn how to make a bed properly and why and how to register a baby's birth, and are prepared for the food work of the next semester which includes lessons on feeding infants. Girls in this grade are still very much interested in babies—in fact most of them actually do take care of babies. Soon after the seventh grade, the children that need the work most begin leaving school.

One of the greatest values from this work is the development of citizenship. The success of the whole course depends on the unselfishness of the girls. They are all eager to sew for themselves but there has been no time when they were not delighted to think that they were helping some unfortunate babies. There have been several cases where these little seventh grade girls showed foreign mothers in our community how to bathe their babies correctly. Does

this not connect the home and school in a vital manner?

NOTES

Elva Helen Clarke, a former teacher in the Omaha schools, has completed her work at the University of South Dakota and accepted a position in the food department at the University of Illinois.

Emma Conley is the new State Supervisor of Home Economics for New York. She was formerly State Supervisor of Home Economics for Wisconsin and during the past four years has been in charge of the Home Economics Extension Division, University of Wisconsin.

Professor Louise P. Glanton, Head of the Department of Clothing and Textiles, Kansas State Agricultural College, will spend the summer vacation in Europe investigating conditions in the textile industries. Miss Glanton will visit the Piedmont silk region of Italy and the linen producing sections of Ireland, near Belfast. She will also spend some time in Paris observing the work of costume designers and modistes.

Cora E. Gray, who resigned her position as Dean of Home Economics at Florida State College for Women, is studying at Columbia University. Mrs. George Atkinson was appointed as Miss Gray's successor.

Ava B. Milam, Dean of the School of Home Economics of the Oregon Agricultural College, has been granted a two years' leave of absence and will go to China to undertake the establishment of a department of home economics in Yenching College, the woman's division of the University of Peking. Camilla Mills, a graduate of the School of Home Economics of the Oregon Agricultural College, will accompany Miss Milam as her assistant. The first part of this leave Miss Milam will devote to a study of the home life of China. The second year she will organize the department of home economics and help in the plans and equipment of a small building suited to this work. At the end of Miss Milam's leave she expects to return to the Oregon Agricultural College. Miss Mills will carry on the work in Peking. This project is financed by the Woman's Foreign Mission Board of the Methodist Episcopal Church and by Peking University which is a union college. During Miss Milam's absence from Oregon her work will be handled by an executive committee consisting of the present heads of home economics departments.

Lottie Milam, M.A., Teachers College, August, 1921, has been appointed as specialist in home management for Montana.

Gladys Smith has been recently appointed nutrition specialist on the Florida Home Demonstration Staff.

Dr. Helen B. Thompson, Dean of the Division of Home Economics, Kansas State Agricultural College, will give courses in nutrition and in home economics education in the summer session of the University of California.

Emma Winslow, who resigned from her position as Home Economics Specialist for the Charity Organization Society of New York, and Lecturer in Household Economics at Teachers College, Columbia University, to pursue graduate study for her doctor's degree in Economics and Sociology at the University of London, reports a very interesting year in the English capital. She is following courses with Professors Bowley, Hobhouse, Westermark, Sydney Webb, and other scholars of international reputation. Miss Winslow is one of the first women with home economics training to go on for special advanced work in economics and sociology—a field in which leaders in home economics have long been hoping that persons of special preparation might appear

The United States Civil Service Commission announces an open competitive examination for Junior in Home Economics April 18; for domestic science teachers in the Indian Service April 26, and June 7; for matron in the Indian Service May 3, and June 21.

Three Fellowships in Social-Economic Research are offered to women who wish thorough preparation for such work. The

fellowships carry a stipend of $500 and clerical assistance, equipment, and traveling expenses necessary for the investigation.

Applications must be filed before May 1st. Address inquiries to the Department of Research, Women's Educational and Industrial Union, 264 Boylston Street, Boston 17, Mass.

The National League of Women Voters will hold its Third Annual Convention April 24–29. The League has called a Pan-American Conference of Women for April 20–29. Both conferences will be held in Baltimore, Maryland, with headquarters at the Belvedere Hotel. For further information address National League of Women Voters, 918 Munsey Bldg., Washington, D. C.

FOREIGN

Mrs. Norton's Work Popular in Constantinople. The New York office of the American College for Girls at Constantinople reports a letter dated December 30th from Dr. Mary Mills Patrick, President of the College, in which she says: "Mrs. Norton has made a large place for herself here, not only because of her ability in home economics, but also in her journalistic training. She has become well known in the city and has recently become Chairman of the Publication Committee of a prominent organization to promote friendliness among the nations of the Near East. Her influence as a dietitian in the domestic department is strong."

Miss M. E. Roberts, Technical College, George and Regent Streets, Sydney, Australia, is beginning cafeteria work in the College.

The Feeding of the Children in Austria is divided between the American Relief Administration and the American Friends' Service Committee. At the present time the largest part of the work of the American Relief Administration is being done in Russia though there are still one or two of their stations in Poland, and only as far back as July they were feeding about 300,000 children in Austria.

The plan for the feeding of children in Austria was developed by Dr. Clemens von Pirquet, who was formerly at Johns Hopkins and who gave the Silliman lectures at Yale University in February. Dr. von Pirquet is the outstanding specialist on children's diseases in Vienna.

School for Servants. A visitor to Denmark would be very much interested in the schools intended for the training of servants. The School for Household Arts, Crown Princesse Louise, has a two year course for 36 to 40 girls. The students are trained through a boarding house maintained by the school, in which the girls do the work. They pay a monthly tuition of 25 Crowns each and are on duty daily with the exception of one afternoon a week and every other Sunday. Fourteen days leave in the summer are also granted. A diploma is given at the end of the course.

Nutrition Work. In Germany the outstanding piece of work of interest to the home economics trained woman is the nutrition work carried on by the American Friends' Service Committee. In July there were about 1,000 stations in various parts of Germany feeding approximately 1,000,000 children daily. The food is intended as a supplementary meal containing 667 calories. No child is admitted who is not found by physical examination to be under-nourished. The Rohrer index is used.

Seven food stuffs, including flour, rice, sugar, condensed milk, cocoa, beans, and vegetable fat are used in the child feeding work. The menus are worked out by Frieda Burkle, a home economics woman from Boston. She has been requested to prepare for the Journal an article describing her work.